Microbenchmark

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Definition

A micro-benchmark is an experimental tool that studies a given aspect (e.g., performance, resource consumption) of XML processing tool. The studied aspect is called the target of the micro-benchmark. A micro-benchmark includes a parametric measure and guidelines, explaining which data and/or operation parameters may impact the target, and suggesting value ranges for these parameters.

Main Text

Micro-benchmarks help capture the behavior of an XML processing system on a given operation, as a result of varying one given parameter. In other words, the goal of a micro-benchmark is to study the *precise* effect of a given system feature or aspect *in isolation.*

Micro-benchmarks were first introduced for object-oriented databases [2]. An XML benchmark sharing some micro-benchmark features is the Michigan benchmark [3] ([CITATION TO EDS ENTRY ON XML BENCHMARKING]). The MemBeR project [1], developed jointly by researchers at INRIA Futurs, the University of Amsterdam, and University of Antwerpen provides a comprehensive repository of micro-benchmarks for XML.

Unlike application benchmarks ([CITATION TO ENTRY ON APPLICATION BENCHMARKS]), micro-benchmarks do not directly help determining which XML processing system is most appropriate for a given task. Rather, they are helpful in assessing particular modules, algorithms and techniques present inside an XML processing tool. Micro-benchmarks are therefore typically very useful to system developers.

Cross-references

- ► Application Benchmarks
- ► XML Application

Recommended Reading

1. Afanasiev L., Manolescu I., and Michiels P. MemBeR: a micro-benchmark repository for XQuery. In Proceedings of the Third International XML Database Symposium (XSym). Trondheim, Norway, August 2005. Available at: http://ilps.science.uva.nl/Resources/MemBeR/index.html.
2. Carey M.J., DeWitt D.J., and Naughton J.F. The OO7 Benchmark. In SIGMOD Record (ACM Special Interest Group on Management of Data). ACM, New York, NY, USA, 1993.
3. Runapongsa K., Patel J.M., Jagadish H.V., Chen Y., and Al-Khalifa S. The Michigan benchmark: towards XML query performance diagnostics. Inf. Syst., 31(2):73–97, 2006.